Reviewer’s report

Title: Prevalence of multimorbidity in the elderly population: results of a study based on electronic medical records

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Reviewer: Åke B Wahlin

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Review of "Prevalence of multimorbidity in the elderly population: results of a study based on electronic medical records". José María Abad-Díez, Amaia Calderón-Larrañaga, Antonio Poncel-Falcó, Beatriz Poblador-Plou, José Manuel Calderón-Meza, Antoni Sicras-Mainar, Mercedes Clerencia-Sierra, and Alexandra Prados-Torres. The paper is submitted for publication in BMC Geriatrics.

This study presents prevalence data for chronic medical diagnoses in a Catalonian population of older individuals in the age range 65+. Separate analyses are performed in in men and women. The focus of interest concerns multimorbidity and associations among different types of multimorbidity and with chronological age and sex.

Although I find the paper well written and interesting, I have some concerns.

Major comments

This study is based on the elderly population segment of the same data that this group reported in a previous paper (PlosOne, 2012). The methodology used in the present paper builds on what was found in the 2012 paper and a main difference is that it now focuses solely on the 65+ population, which is in the current report subdivided into three age segments (ranges). While the already published study documented clusters of multimorbidity by means of factor analyses, the current study is mainly characterized by descriptive analyses, although the risks for belonging to a certain multimorbidity cluster associated with sex or another multimorbidity cluster are computed. In comparing the two studies it is not entirely obvious to me what motivates the report under scrutiny this time. This has to be clearly explained to the reader.

I lack a proper discussion of the age and sex disparities in prevalence figures studied here, in relation to the development of multimorbidity patterns that was studied in the previous study. In a lifespan perspective, what meaning do the varying prevalence figures in this more fine-grained study of the older age span have (lifespan development of multimorbidity was studied in the PlosOne paper).

This might be a minor comment, but what kind of figures are presented in Table 4? Percentages? For example, the prevalence of dementia/delirium among men who are 65-74 years cannot be 31.1%. It actually says in the Results that the
prevalence of diabetes and hypertension exceeds 80%, which is a figure that can be found in Table 4. I find that hard to believe.

Minor comments

Abstract: The age range under scrutiny should be mentioned. The word “elderly” has many meanings.

Background: Third paragraph, …lack of coordination. I assume it is between primary and specialist care?

Methods: “Methodos” should read Methods

Discussion: The directions of the CM patterns need to be discussed. The prevalence increases with age in men and decreases in women. It is not enough to say that gender disparities in diagnosis and treatment have been discussed elsewhere.

About the structure of the coding system: for which health problems is there a risk for underestimation of the frequency (the authors mention this under strengths and limitations)? I also wonder whether there are administrative or economic motifs for registration of certain diagnoses? Registries of this kind are often motivated by economic incentives. Also, were the diagnoses registered as primary, secondary etcetera? Were there limits to how many diagnoses that could be registered for a given individual? I believe this is important information.

The term “frailty” is mentioned at several places throughout the manuscript without a proper definition. What do the authors mean by “frailty”?

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I have no competing interests.